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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,705	03/17/2004	Hans Peter Brack	GEPL.P-086-2	4827
43247	7590	07/24/2006	EXAMINER	
Marina Larson & Associates LLC			OH, TAYLOR V	
re: lexan			ART UNIT	
PO BOX 4928			PAPER NUMBER	
DILLON, CO 80435			1625	

DATE MAILED: 07/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/802,705

Applicant(s)

BRACK ET AL.

Examiner

Taylor Victor Oh

Art Unit

1625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/17/04</u> . | 6) <input type="checkbox"/> Other: _____ |

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The Status of Claims

Claims 1-13 are pending.

Claims 1-13 have been rejected.

DETAILED ACTION

Priority

1. It is noted that this application is a continuation of 10/027,139 (12/26/2001) ABN ,which claims benefit of 60/258,710 IP (12/28/2000).

Drawings

2. None.

Claim Rejections - 35 USC § 112


The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-4 and 7-13 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an aromatic polycarbonate having free terminal groups, does not reasonably provide enablement for all kinds of the aromatic polycarbonates. The specification does not enable any person skilled in the art to which

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it pertains, or with which it is most nearly connected, to include the aromatic polycarbonates unrelated to the invention commensurate in scope with these claims. The specification offers the only possible form of the aromatic polycarbonate to be used under melt conditions as follows (see page 5, lines 5-10):

 . Therefore, the specification has failed to support enablement for all the possible aromatic polycarbonates known in the art and to describe how all those aromatic polycarbonates would work to produce the desired products during the process. Therefore, an appropriate correction is required.

Claim Rejections - 35 USC § 103

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

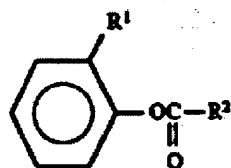
The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneko et al (U.S. 5,696,222).

Kaneko et al teaches a process of producing a terminal -blocked aromatic polycarbonate by melt-polycondensating an aromatic dihydroxy compound and diphenyl carbonate as shown in the compound of the formula (1) (see col. 3 ,lines 20-50):

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(1)

wherein R¹ is a chlorine atom, a methoxycarbonyl group or an ethoxycarbonyl group, and R² is an alkyl group having 1 to 30 carbon atoms, an alkoxy group having 1 to 30 carbon atoms, an aryl group having 6 to 30 carbon atoms or an aryloxy group having 6 to 30 carbon atoms, provided that the alkyl group having 1 to 30 carbon atoms and the alkoxy group having 1 to 30 carbon atoms may be substituted with methoxycarbonyl group, ethoxycarbonyl group, (o-methoxycarbonylphenyl)oxycarbonyl group or (o-ethoxycarbonylphenyl)oxycarbonyl group and that the aryl group having 6 to 30 carbon atoms and the aryloxy group having 6 to 30 carbon atoms may be substituted with methoxycarbonyl group, ethoxycarbonyl group, (o-methoxycarbonylphenyl)oxycarbonyl group, (o-ethoxycarbonylphenyl)oxycarbonyl group, an alkyl group having 1 to 30 carbon atoms or an alkoxy group having 1 to 30 carbon atoms, after a polycarbonate formed has an intrinsic viscosity of at least 0.3 dl/g, to form a terminal-blocked polycarbonate having an intrinsic viscosity which is greater than, or smaller than, the intrinsic viscosity of the polycarbonate formed before the addition by 0.1 dl/g at the most.

The compound of the above formula (1) is used in an amount of preferably about 0.5 to about 2.0 mol, more preferably about 0.7 to about 1.5 mol, particularly preferably about 0.8 to about 1.2 mol, based on 1 equivalent of terminal hydroxyl group of the polycarbonate.

(see col. 8, lines 60-65).

Furthermore, Kaneko et al indicates that the addition of a compound to the claimed compounds as an terminal capper to a pre-formed oligomeric polycarbonate of Mn =9,378 (obtained from value of $\eta=0.451$) in a ratio of 0.5 molar equivalents relative to the original polycarbonate hydroxyl groups to yield a capped oligomeric

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polycarbonate of $\eta=0.660$, an increase of 0.209dl/g in intrinsic viscosity (See col. 33 and 34, lines 31 + ,table 10, examples 19 and 20). In addition, Table 10 , example 19 teach that the increment in the end-capping (reduction in terminal hydroxyl) was 45 % to 95 % ; the prior art reveals that all of the end-capper was added after polycarbonate formation. Tables 1,2, and 3 (see cols. 21-24) show residual phenolic content of 0-220 ppm .

The instant invention, however, differs from the prior art in that the level of residual end capper in the product polycarbonate is unspecified and the claimed compound has a moiety of R1 (= propoxy) unlike the prior art compound with R1 being ethoxy.

With respect to the teaching of the level of residual end capper in the product polycarbonate, the reference is silent. However, in view of the reaction process disclosed in the examples in the prior art , it is possible to assume that consumption of the end-capper is complete so that the level of residual end capper in the product becomes 0 ppm .

Regarding the absence of teaching using the claimed R1 (= propoxy) unlike the prior art compound with R1 being ethoxy. However, they are in a homologous relationship to each other with a difference of one carbon atom. Compounds that differ only by the presence or absence of an extra methyl group or two are homologues.

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Homologues are of such close structural similarity that the disclosure of a compound renders *prima facie* obvious its homologue. The homologue is expected to be prepared by the same method and to have generally the same properties. This expectation is then deemed the motivation for preparing homologues. Of course, these presumptions are rebuttable by the showing of unexpected effects, but initially, the homologues are obvious even in the absence of a specific teaching to add or remove methyl groups. See *In re Wood*, 199 USPQ 137; *In re Hoke*, 195 USPQ 148; *In re Lohr*, 137 USPQ 548; *In re Magerlein*, 202 USPQ 473; *In re Wiechert*, 152 USPQ 249; *Ex parte Henkel*, 130 USPQ 474; *In re Fauque*, 121 USPQ 425; *In re Druey*, 138 USPQ 39. In all of these cases, the close structural similarity between two compounds differing by one or two methyl groups was itself sufficient show obviousness. See also MPEP 2144.09, second paragraph.

Kaneko et al expressly teaches the process of producing a terminal –blocked aromatic polycarbonate by melt-polycondensating an aromatic dihydroxy compound and diphenyl carbonate as shown in the compound of the formula (1) and its substituent R1 of the formula (1) has one carbon shorter than the claimed one by comparison. Even so, their relationship is homologous to each other ; the homologue is expected to be prepared by the same method and to have generally the same properties. Therefore, it would have been obvious to the skilled artisan in the art to be motivated to use the homologue of Kaneko's et al R1 as an alternative in the claimed process . This is because the skilled artisan in the art would expect such a modification to be successful and uncritical for the claimed process in the absence of the unexpected result.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 571-272-0689. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas McKenzie can be reached on 571-272-0670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Taylor V. Oh
7/20/06